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Amendment and Response

Serial No.: 10/672,814

Confirmation No.: 8914

Filed: 26 September 2003

For: DENTAL COMPOSITIONS AND METHODS WITH ARYLSULFINATE SALTSRemarks

The Office Action mailed 14 July 2006 has been received and reviewed. Claims 1, 2, 12, 18, 21, 25, 29, 34, 44, and 55 having been amended, no claims having been canceled, and claims 63-73 having been added, the pending claims are claims 1-73. Claims 18-62 have been withdrawn from consideration by the Examiner as being drawn to non-elected groups. Thus, the previously pending claims that are currently under consideration are claims 1-17.

The specification has been amended to update the Serial Numbers and publication information for applications cited herein.

Claim 2 has been amended to delete the recitations including the term "e.g.," and claims 63 and 64 have been added to recite the deleted subject matter. Because new claims 63 and 64 depend from claim 2, Applicants respectfully submit that new claims 63 and 64 are drawn to the subject matter of the group that is currently under consideration.

Independent claims 1, 12, 18, 21, 25, 29, 34, 44, and 55 have been amended to further describe cations for the arylsulfinate salt. The amendments are supported by the specification at, for example, page 16, lines 10-19 and page 18, lines 16-23.

New claims 65-73 are supported, for example, by originally filed claims 1, 12, 18, 21, 25, 29, 34, 44, 55, respectively, and the specification at, for example, page 15, lines 8-25. Applicants respectfully submit that new claims 65 and 66 are drawn to the subject matter of the group that is currently under consideration, and that claims 67-73 are drawn to subject matter of groups that have been withdrawn from consideration by the Examiner.

Thus, Applicants respectfully submit that claims 1-17 and 63-66 are currently under consideration.

Reconsideration and withdrawal of the rejections are respectfully requested.

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**Objection to the Specification**

The Examiner objected to blank lines for U.S. Patent Application Serial Nos. at pages 12, 20, and 47. The specification having been amended to update the Serial Numbers and publication information for applications cited therein, the objection has been rendered moot.

**Objection to the Claims**

The Examiner objected to the expression "e.g." recited in claim 2, alleging that it is a range within a range. Applicants disagree. However, in an effort to expedite prosecution of the present application, the expressions "e.g." in claim 2 have been deleted, and the rejection has been obviated.

**Rejections under 35 U.S.C. §102/103**

The Examiner rejected claims 1, 2, 4, 5, 8, 9, 11, 12, 14, and 16 under 35 U.S.C. §102(a) as being anticipated by, or in the alternative, under 35 U.S.C. §103(a) as obvious over EP 1 269 967 A1. This rejection is respectfully traversed.

For at least the reason that EP 1 269 967 A1 neither discloses nor suggests arylsulfinate salts that have a cation selected from (1) a phosphorus-containing cation of Formula III or (2) a nitrogen-containing cation having a ring structure that includes a 4 to 12 member heterocyclic group (e.g., independent claims 1 and 12, as amended), Applicants respectfully submit that the rejection has been obviated.

The Examiner rejected claims 1, 2, and 4-16 under 35 U.S.C. §102(b) as being anticipated by, or in the alternative, under 35 U.S.C. §103(a) as obvious over Mukai et al. (U.S. Patent No. 4,983,644). This rejection is respectfully traversed.

For at least the reason that Mukai et al. neither disclose nor suggest arylsulfinate salts that have a cation selected from (1) a phosphorus-containing cation of Formula III or (2) a nitrogen-containing cation having a ring structure that includes a 4 to 12 member heterocyclic

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group (e.g., independent claims 1 and 12, as amended), Applicants respectfully submit that the rejection has been obviated.

The Examiner rejected claims 1-6, 12, 13, and 17 under 35 U.S.C. §102(e) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Shimada et al. (U.S. Publication No. 2003/0054288 A1). This rejection is respectfully traversed.

For at least the reason that Shimada et al. neither disclose nor suggest arylsulfinate salts that that have a cation selected from (1) a phosphorus-containing cation of Formula III or (2) a nitrogen-containing cation having a ring structure that includes a 4 to 12 member heterocyclic group (e.g., independent claims 1 and 12, as amended), Applicants respectfully submit that the rejection has been obviated.

Reconsideration and withdrawal of the rejections under 35 U.S.C. §102/103 are respectfully requested.

**Rejections under 35 U.S.C. §103**

The Examiner rejected claims 1-17 under 35 U.S.C. §103(a) as being unpatentable over EP 1 269 967 A1 in view of Nikutowski et al. (U.S. Patent No. 6,528,555) or Kawashima et al. (U.S. Patent No. 5,486,544). This rejection is respectfully traversed.

For at least the reason that none of EP 1 269 967 A1, Nikutowski et al., and Kawashima et al., either alone or in combination, disclose or suggest arylsulfinate salts that that have a cation selected from (1) a phosphorus-containing cation of Formula III or (2) a nitrogen-containing cation having a ring structure that includes a 4 to 12 member heterocyclic group (e.g., independent claims 1 and 12, as amended), Applicants respectfully submit that the rejection has been obviated.

The Examiner rejected claims 1-17 under 35 U.S.C. §103(a) as being unpatentable over Mukai et al. in view of Nikutowski et al. or Kawashima et al. This rejection is respectfully traversed.

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For at least the reason that none of Mukai et al., Nikutowski et al., and Kawashima et al., either alone or in combination, disclose or suggest arylsulfinate salts that have a cation selected from (1) a phosphorus-containing cation of Formula III or (2) a nitrogen-containing cation having a ring structure that includes a 4 to 12 member heterocyclic group (e.g., independent claims 1 and 12, as amended), Applicants respectfully submit that the rejection has been obviated.

The Examiner rejected claims 1-17 under 35 U.S.C. §103(a) as being unpatentable over Kawashima et al. This rejection is respectfully traversed.

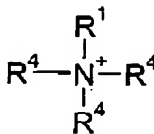
For at least the reason that Kawashima et al. neither disclose nor suggest arylsulfinate salts that have a cation selected from (1) a phosphorus-containing cation of Formula III or (2) a nitrogen-containing cation having a ring structure that includes a 4 to 12 member heterocyclic group (e.g., independent claims 1 and 12, as amended), Applicants respectfully submit that the rejection has been obviated.

Reconsideration and withdrawal of the rejections under 35 U.S.C. §103 are respectfully requested.

**New Claims**

New claims 63 and 64 depend from claim 2. Applicants respectfully submit that new claims 63 and 64 are patentable for at least the reasons that claim 2 is patentable, in addition to reasons related to additional subject matter recited in each.

New claims 65 and 66 recite, among other things, aryl sulfinate salts having a cation of Formula II:



II

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where  $R^1$  and each  $R^4$  are independently alkyl groups having at least 3 carbon atoms. An exemplary cation of Formula II is tetrabutylammonium (e.g., page 15, lines 24-25). Applicants note that tetrabutylammonium sulfinate salts as described in the working examples, e.g., the tetrabutylammonium salt of 4-cyanobenzenesulfinic acid (CBSA TBA) and the tetrabutylammonium salt 4-carboethoxybenzenesulfinic acid (CEBSA TBA), have sufficient solubility in ethylenically unsaturated compounds to be useful as electron donors in initiator systems for polymerizable dental compositions, for example. *See, for example*, the specification at page 11, lines 30-32.

Applicants respectfully submit that claims 65 and 66 are patentable over the cited art for at least these reasons.

**Request for Rejoinder**

Withdrawn claims 18-24 each recite a method of using a composition as recited, for example, in independent claim 1. Withdrawn claims 25, 27-29, and 31-33 each recite a method of using a composition as recited, for example, in independent claim 12. Withdrawn claims 26 and 30 each recite a method of using a composition as recited, for example, in both independent claims 1 and 12. Newly added withdrawn claims 67 and 68 each recite a method of using a composition as recited, for example, in new independent claim 65. Newly added withdrawn claims 69 and 70 each recite a method of using a composition as recited, for example, in new independent claim 66. Upon an indication of the allowability of any of independent claims 1, 12, 65, and 66, Applicants respectfully request that claims 18-33 and 67-70 be rejoined, examined, and passed on to allowance pursuant to M.P.E.P. §821.04. *See, for example, In re Ochiai*, 71 F.3d 1565, 37 USPQ2d 1127 (Fed. Cir. 1995) and *In re Brouwer*, 77 F.3d 422, 37 USPQ2d 1663 (Fed. Cir. 1996).

Withdrawn claims 34-62 recite all the language of, for example, independent claim 12. Newly added withdrawn claims 71-73 recite all the language of, for example, new independent claim 66. Upon an indication of the allowability of independent claims 12 and/or 66, Applicants

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respectfully request that claims 34-62 and 71-73 be rejoined, examined, and passed on to allowance pursuant to M.P.E.P. §821.04. *See, for example, In re Ochiai*, 71 F.3d 1565, 37 USPQ2d 1127 (Fed. Cir. 1995) and *In re Brouwer*, 77 F.3d 422, 37 USPQ2d 1663 (Fed. Cir. 1996).

Summary

It is respectfully submitted that all the pending claims are in condition for allowance and notification to that effect is respectfully requested. The Examiner is invited to contact Applicants' Representatives, at the below-listed telephone number, if it is believed that prosecution of this application may be assisted thereby.

Respectfully submitted

By

Mueing, Raasch &amp; Gebhardt, P.A.

P.O. Box 581415

Minneapolis, MN 55458-1415

Phone: (612) 305-1220

Facsimile: (612) 305-1228

October 16, 2006

Date

By: 

Loren D. Albin

Reg. No. 37,763

Direct Dial (612) 305-1225

CERTIFICATE UNDER 37 CFR §1.8:

The undersigned hereby certifies that the Transmittal Letter and the paper(s), as described hereinabove, are being transmitted by facsimile in accordance with 37 CFR §1.6(d) to the Patent and Trademark Office, addressed to Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 16th day of October, 2006, at 4:11 p.m. (Central Time).

By: Name: Rachel Ongliando